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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/597,547	06/19/2000	Juris Sulcs	ADVB-412	4064

7590 01/16/2003

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EXAMINER	
SANTIAGO, MARICELI	

ART UNIT	PAPER NUMBER
2879	

DATE MAILED: 01/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/597,547	SULCS ET AL.	
	Examiner	Art Unit	
	Mariceli Santiago	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 October 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-50* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *41-50* is/are allowed.

6)☒ Claim(s) *1-4, 8, 11, 12-14, 16, 17, 19, 23-26, 27, 29, 30, 32-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Amendment

The Amendment, filed on October 15, 2002, has been entered and acknowledged by the Examiner.

Specification

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

Claim 41 recites the limitation "An arc tube blank comprising an enlarged light emitting chamber intermediate tubular ends of the same diameter, the chamber having a lower portion with a flattened bottom", the specification fails to provide proper antecedent basis for the claimed subject matter since as disclosed the arc tube ends are pinch sealed in a junction between upper and lower portion of the arc tube with an absence of tubular ends.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 3, 4, 12-14, 16, 27, 29 and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Kowalczyk et al. (US 5,525,863).

Regarding claim 3, Kowalczyk discloses a discharge lamp (see Figs.3 and 4a) having a base (1), a light transparent outer envelope (2) and an arc tube operatively mounted therein, the

base (1) and the arc tube (3) being rotationally fixed relative to each other and the base having means (6 and 7) for predetermining the rotational orientation thereof when operatively mounted in a fixture, the arc tube (10) having a pair of spaced apart electrodes (15), an upper portion (10b) longitudinally conforming generally between the electrodes to the shape of the arc to be drawn therebetween and a canoe-shaped lower portion (10a, lower portion is canoe-shape, i.e., having flat lower portion with upwardly extending end portions, in the longitudinal direction).

Regarding claim 4, Kowalczyk discloses a lamp wherein the lower portion has a substantially flattened bottom (see Fig.4a, lower portion in the longitudinal direction).

Regarding claim 12, Kowalczyk discloses an arc tube (see Fig. 4a) having a pair of spaced apart electrodes (15) and a canoe-shaped lower portion (10a, lower portion is canoe-shape, i.e., having flat lower portion with upwardly extending end portions, in the longitudinal direction).

Regarding claim 13, Kowalczyk discloses an arc tube (see Fig. 4a) including an upper portion longitudinally conforming generally between the electrodes (15) to the shape of the arc to be drawn therebetween.

Regarding claim 14, Kowalczyk discloses an arc tube wherein the bottom portion is upwardly concave both longitudinally (Fig. 4a) and transversely (Fig. 4c).

Regarding claim 16, Kowalczyk discloses an arc tube wherein the electrodes (15) are closer to all parts of the bottom portion than to any part of the upper portion (the electrodes are offset on a vertical downwardly direction from the central axis of the arc tube, see Figs. 4a and 4c).

Regarding claim 27, Kowalczyk discloses an arc tube (see Figs. 2a and 2b) having a pair of spaced apart electrodes, a circular cross-section upper portion and a lower portion with a

flattened bottom, the distance from the electrodes to the flattened bottom being less than the distance from electrodes to the upper portion (Column 2, lines 31-49).

Regarding claim 29, Kowalczyk discloses an arc tube wherein the upper portion joins the lower portion below the electrodes (see Fig. 2a).

Regarding claim 30, Kowalczyk discloses an arc tube (see Figs. 2a and 2b) having a pair of spaced apart coaxial electrodes, a circular cross-section upper portion and a lower portion having a flattened bottom, the upper portion joins the lower portion below the elevation of the electrodes (see Fig. 2a).

Claims 17, 19, 23-26 and 32-37 are rejected under 35 U.S.C. 102(b) as being anticipated by Howles et al. (US 4,001,623).

Regarding claim 17, Howles discloses a double-ended arc tube having a pair of spaced apart electrodes (14), an upper potion (19, uppers section of the arc tube in the longitudinal direction, Fig. 5) longitudinally conforming generally between the electrodes to the shape of the arc to be drawn threbetween in the operation of the arc tube (10), and a flattened bottom (bottom section of arc tube 10, flattened in the longitudinal direction, Fig. 5).

Regarding claim 19, Howles discloses an arc tube (see Fig. 5) wherein the electrodes (14) are closer to all parts of the bottom portion (10) than to any part of the upper portion (19).

Regarding claim 23, Howles discloses an arc tube having a pair of spaced apart electrodes (14) and a lower portion having a flattened bottom (bottom section of arc tube 10, flattened in the longitudinal direction, Fig. 5), the distance from the electrodes (14) to the bottom (bottom section of arc tube 10, flattened in the longitudinal direction) being less than the distance from the electrodes (14) to the upper portion (19) of the arc tube (see Fig. 5).

Regarding claim 24, Howles discloses an arc tube wherein the upper portion is circular in cross-section between the free ends of the electrodes, the radius of curvature of the upper portion increasing from the electrodes toward the center of the arc tube (Fig. 6 shows a circular cross-sectional upper portion; as shown in Fig. 5 the cross-section of the arc tube decreases in diameter from the center of the arc tube towards the ends, i.e., electrodes location, accordingly, the radius of curvature is larger for the center of the arc tube with a larger diameter than for the ends of the arc tube with a smaller diameter).

Regarding claim 25, Howles discloses an arc tube (see Fig. 6) where the electrodes are lower than the axis of the circle of the upper portion at the center of the arc tube (cross-section on Fig. 6 shows an axis center 13, the electrodes are offset a distance x below center 13, Column 2, lines 10-23).

Regarding claim 26, Holes discloses an arc tube (Fig. 6) wherein the upper portion joins the lower portion below the electrodes.

Regarding claim 32, Howles discloses an arc tube (see Fig. 5) having a pair of spaced apart coaxial electrodes (14), an upper portion (19) longitudinally conforming generally between the electrodes to the shape of the arc to be drawn threbetween in the operation of the arc tube (10), and a flattened bottom (bottom section of arc tube 10, flattened in the longitudinal direction). The recitation "to hereby reduce the temperature differential in the arc tube walls" has not been given patentable weight because is considered an intended used recitation. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ 2d 1647 (1987).

Regarding claim 33, Howles discloses an arc tube (Fig. 5) wherein the bottom portion is the lowest elevation of the arc tube at the longitudinal center of the arc tube.

Regarding claim 34, Howles discloses an arc tube wherein the electrodes (14) are closer to the bottom portion than to the upper portion (19) at the longitudinal center of the arc tube (10).

Regarding claim 35, Howles discloses an arc tube wherein the sides thereof progressively narrow from the center thereof toward both ends thereof (Fig. 6).

Regarding claim 36, Howles discloses an arc tube (see Fig.6) having a pair of spaced apart electrodes (14), a generally circular cross-section upper portion (cross-section upper portion of arc tube 10, see Fig. 6) and a generally circular bottom portion (cross-section bottom portion of arc tube 10, see Fig. 6), the radius of curvature of the bottom portion being substantially greater then the radius of the upper portion (Fig. 6, as shown in the figure, the diameter of the bottom portion is larger that the diameter of the upper portion, accordingly, the radius of curvature of the bottom section is larger than the radius of curvature of the upper portion).

Regarding claim 37, Howles discloses an arc tube having a pair of spaced apart electrodes (14) and a flattened bottom (bottom portion of arc tube 10, flattened in the longitudinal direction) concave upwardly both longitudinally and laterally (see Figs. 5 and 6).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Howles et al. (US 4,001,623) in view of Kowalczyk et al. (US 5,525,863).

Regarding claim 1, Howles discloses an arc tube (see Fig. 5) having a pair of spaced apart coaxial electrodes (14), an upper portion (19) longitudinally conforming generally between the electrodes to the shape of the arc to be drawn in the operation of the lamp, and a flattened lower portion (Fig. 5, flattened bottom section of lamp 10 in the longitudinal axis), the distance at all cross-sectional locations between the electrodes (14) between the flattened lower portion and the axis of the electrodes being less than the distance between the upper portion and the axis of the electrodes (14).

Howles is silent in regards to the limitation of the arc tube further including a base, a light transparent outer envelope, the base and the arc tube being rotationally fixed relative to each other and the base having means for predetermining the rotational orientation thereof when operatively mounted in a fixture. However, in the same field of endeavor, Kowalczyk discloses an arc tube assembly (see Fig. 3) further comprising a base (1), a light transparent outer envelope (2), the base and the arc tube being rotationally fixed relative to each other and the base having means (6 and 7) for predetermining the rotational orientation thereof when operatively mounted in a fixture. An outer envelope assembly is commonly used discharge lamps in order to provide additional protection in case of rupture of the arc tube. Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to incorporate the outer envelope assembly as disclosed by Kowalczyk in the arc tube of Howles in order to provide additional protection in case of rupture of the arc tube.

Regarding claim 2, Howles discloses an arc tube (see Fig. 5) having a pair of spaced apart coaxial electrodes (14), an upper portion (19) longitudinally conforming generally between the electrodes to the shape of the arc to be drawn in the operation of the lamp, and a flattened lower portion (Fig. 5, flattened bottom section of lamp 10 in the longitudinal axis), no part of

which is further than the radius of the upper portion defining circle. Claim 2 is rejected for the same reasons stated in the rejection of claim 1 above.

Claims 38, 39 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Caruso et al. (US 4,742,268).

Regarding claim 38, Caruso discloses an arc tube (5) having a decreasing width from the center of the arc tube towards the ends of the arc tube and wherein the width at the center of the arc tube is larger than the width at the at the free ends of the electrodes. Caruso is silent in regards to the limitation of the width of the arc tube at the height of the electrodes at the free ends of the electrodes is 2/3 of the width of the arc tube at the height of the electrodes at the center of the arc tube. Discovering an optimum value of a result effective variable by undue experimentation involves only routine skill in the art. Thus, it would have been obvious to one of ordinary skills in the art at the time the invention was made to provide the arc tube with a width of the arc tube at the height of the electrodes at the free ends of the electrodes being 2/3 of the width of the arc tube at the height of the electrodes at the center of the arc tube, since discovering an optimum value of a result variable is considered within the skills of the art.

Regarding claim 39, Caruso discloses an arc tube (5, Fig. 2) wherein the ratio of the width to the height of the arc tube at the longitudinal center is approximately one (the values of the arc tube diameter and the maximum vertical height are almost the same).

Regarding claim 40, Caruso discloses an arc tube (see Fig. 4a) wherein the upper portion of the arc tube longitudinally conforms generally between the electrodes to the shape of the arc to be drawn therebetween in the operation of the arc tube.

Claims 8 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cox (US 4,988,917) in view of Fohl et al. (US 4,499,396).

Regarding claim 8, Cox discloses an arc tube (see Fig. 1) having a pair of spaced apart electrodes (34) tilted downwardly toward the center of the arc tube (end tip 36 of electrode 16).

Cox is silent in regards to the limitation of the arc tube further including a base, a light transparent outer envelope, the base and the arc tube being rotationally fixed relative to each other and the base having means for predetermining the rotational orientation thereof when operatively mounted in a fixture. However, in the same field of endeavor, Fohl discloses an arc tube assembly (see Fig. 1) further comprising a base, a light transparent outer envelope (10), the base and the arc tube being rotationally fixed relative to each other and the base having means (19 and 30) for predetermining the rotational orientation thereof when operatively mounted in a fixture. An outer envelope assembly is commonly used discharge lamps in order to provide additional protection in case of rupture of the arc tube. Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to incorporate the outer envelope assembly as disclosed by Fohl in the arc tube of Cox in order to provide additional protection in case of rupture of the arc tube.

Regarding claim 11, Cox discloses an arc tube wherein the top of the arc tube is arched between the electrodes to approximate the position of the arc drawn in the operation of the lamp.

Allowable Subject Matter

Claims 41-50 are allowed.

Claims 5-7, 9, 10, 15, 18, 20-22, 28, 31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 5, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 5, and specifically comprising the limitation of the lower portion of the arc tube has an upwardly concave end to end and side to side flattened bottom.

Regarding claims 6, 15 and 18, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claims 6, 15 and 18, and specifically comprising the limitation of the electrodes are tilted downwardly toward each other.

Regarding claims 7 and 9, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claims 7 and 9, and specifically comprising the limitation of the width of the arc tube at the height of the free ends of the electrodes is approximately two thirds of the arc tube at the same height at the center of the arc tube.

Regarding claim 10, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 10, and specifically comprising the limitation of the width of the arc tube is greater than the height of the arc tube at the longitudinal center.

Regarding claim 20, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 20, and specifically comprising the limitation

of a double ended arc tube having a pair of spaced apart electrodes, the electrodes are tilted downwardly toward each other.

Regarding claims 21-22, claims 21-22 are allowable for the reasons given in claim 20 because of their dependency status from claim 20.

Regarding claims 28 and 31, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claims 28 and 31, and specifically comprising the limitation of the radius of curvature of the top portion increases from the electrodes to the center of the arc tube.

Regarding claim 41, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 41, and specifically comprising the limitation of an arc tube blank comprising an enlarged light emitting chamber intermediate tubular ends of the same diameter, the chamber having a lower portion with a flattened bottom.

Regarding claims 42-50, claims 42-50 are allowable for the reasons given in claim 41 because of their dependency status from claim 41.

Response to Arguments

Applicant's arguments filed October 15, 2002 have been fully considered but they are not persuasive.

In response to Applicant's arguments regarding claims 17, 19, 23-25 and 32-37, rejected over Howles et al., and claims 1 and 2, rejected over Howles et al. in view of Kowalczyk et al., the Examiner respectfully disagree. Howles discloses an arc tube having a pair of spaced apart coaxial electrodes offset from the center axis of the arc tube in a downwardly vertical direction. Howles shows a longitudinal view of the arc tube envelope having an upper portion conforming generally between the electrodes to the shape of the arc and a flattened bottom. Furthermore,

Howles shows a cross sectional view having a generally circular cross-section upper portion and a generally circular bottom portion, the bottom portion having a diameter larger than the upper portion, thus, having a radius of curvature larger in the bottom portion than in the upper portion. Accordingly, for the reasons stated above, the rejection of claims 1, 2, 17, 19, 23-25 and 32-37 is deemed proper.

In response to Applicant's arguments regarding claims 3, 4,12-14 and 16, rejected over Kowalczyk et al., the Examiner respectfully disagree. Kowalczyk discloses an arc tube having a pair of spaced apart electrodes offset from the center axis of the arc tube in a downwardly vertical direction. Kowalczyk shows a longitudinal view of the arc tube envelope having a canoe-shaped lower portion, i.e., having a flat lower portion with upwardly extending end portions. Accordingly, for the reasons stated above, the rejection of claims 12-14 and 16 is deemed proper.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mariceli Santiago whose telephone number is (703) 305-1083. The examiner can normally be reached on Monday-Friday from 7:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel, can be reached on (703) 305-4794. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7382. Additionally, the following fax phone numbers can be used during the prosecution of this application (703) 872-9318 (for response before a Final Action) and (703) 872-9319 (for response after a Final Action).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

MSt 1/10/03
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